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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/650,375	08/28/2003	Crispin O'Brien	2003-IP-011793U1	7326

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EXAMINER

COLLINS, GIOVANNA M

ART UNIT PAPER NUMBER

3672

DATE MAILED: 12/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/650,375

Applicant(s)

O'BRIEN ET AL.

Examiner

Giovanna M. Collins

Art Unit

3672

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 20030828
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Objections

Claims 16-21 are objected to because of the following informalities: In claims 16-21, the word "method" should be changed to - - system - -. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Thomas et al. 5,036,919.

Thomas discloses a method of fracturing a subterranean formation comprising the steps of: placing a first fluid comprising a foamed carbon dioxide fluid, an emulsion of carbon dioxide, or a carbon dioxide gel (col.3, lines 20-24) into a subterranean formation at a pressure sufficient to create or extend at least one fracture therein; placing a second fluid comprising an alkaline cross linked fluid (col. 3, lines 25-31) into the subterranean formation at a pressure sufficient to cause the second fluid to enter the fracture created or extended by the first fluid; and, releasing the pressure on the subterranean formation and thereby allowing the first fluid to intermix with the second fluid wherein the first fluid lowers that ph of the second fluid and causes the second fluid to reduce viscosity (col. 3, lines 44-51).

Referring to claims 2,9 and 16, Thomas discloses the second fluids crosslinkages are reversed at a ph below about 8 (col. 3, lines 40-50).

Referring to claims 3,10 and 17, Thomas discloses the second fluid comprises a hydratable polymer (col. 3, lines 35-37).

Referring to claim 4,11,18, Thomas discloses the second fluid is crosslinked with a crosslinking agent comprising alkali metal borates, borax, boric acid, or borate ions (col. 3, lines 35-37).

Referring to claims 5,12, and 19, Thomas discloses the second fluid comprises a guar or guar derivative fracturing fluid crosslinked with a borate crosslinking agent (col. 3, lines 35-37).

Referring to claim 6,13 and 20, Thomas discloses the first fluid further comprises proppant (col. 2, lines 57-58).

Referring to claims 7,14 and 21, Thomas discloses the second fluid further comprises proppant (col.2, line 65- col. 3, line 1).

Referring to claim 8, Thomas discloses a method of gravel packing along a well bore comprising the steps of placing a first fluid comprising a foamed carbon dioxide fluid, an emulsion of carbon dioxide, or a carbon dioxide gel (col.3, lines 20-24) into a well bore at a pressure sufficient to penetrate into the formation; placing a second fluid comprising an alkaline cross linked fluid (col. 3, lines 25-31) into the subterranean formation at a pressure sufficient to cause the second fluid to enter the fracture created or extended by the first fluid; and, releasing the pressure on the subterranean formation and thereby allowing the first fluid to intermix with the second fluid wherein the first fluid lowers that ph of the second fluid and causes the second fluid to reduce viscosity (col. 3, lines 44-51).

Art Unit: 3672

Referring to claim 15, Thomas discloses a system for treating subterranean formation comprising a first fluid comprising a foamed carbon dioxide fluid, an emulsion of carbon dioxide, or a carbon dioxide gel (col.3, lines 20-24) and a second fluid comprising an alkaline cross linked fluid (col. 3, lines 25-31).

2. Claims 1-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Harms 5,271,466.

Harms discloses a method of fracturing a subterranean formation comprising the steps of: placing a first fluid comprising a foamed carbon dioxide fluid, an emulsion of carbon dioxide, or a carbon dioxide gel (col.4, lines 41-42) into a subterranean formation at a pressure sufficient to create or extend at least one fracture therein; placing a second fluid comprising an alkaline cross linked fluid (col. 4, lines 54-60) into the subterranean formation at a pressure sufficient to cause the second fluid to enter the fracture created or extended by the first fluid; and, releasing the pressure on the subterranean formation and thereby allowing the first fluid to intermix with the second fluid wherein the first fluid lowers that ph of the second fluid and causes the second fluid to reduce viscosity (col. 6, lines 16-34).

Referring to claims 2,9 and 16, Harms discloses the second fluids crosslinkages are reversed at a ph below about 8 (col.6, lines 21-26).

Referring to claims 3,10 and 17, Harms discloses the second fluid comprises a hydratable polymer (col. 4, line 65- col. 5 line 1).

Referring to claim 4,11,18, Harms discloses the second fluid is crosslinked with a crosslinking agent comprising alkali metal borates, borax, boric acid, or borate ions (col. 5, lines 16-25).

Referring to claims 5,12, and 19, Harms discloses the second fluid comprises a guar or guar derivative fracturing fluid crosslinked with a borate crosslinking agent (col. 4, line 65- col. 5 line 1).

Referring to claim 6,13 and 20, Harms discloses the first fluid further comprises proppant (col. 4, lines 46-49).

Referring to claims 7,14 and 21, Harms discloses the second fluid further comprises proppant (col.5, lines 55-62).

Referring to claim 8, Harms discloses a method of gravel packing along a well bore comprising the steps of placing a first fluid comprising a foamed carbon dioxide fluid, an emulsion of carbon dioxide, or a carbon dioxide gel (col.4, lines 41-42) into a well bore at a pressure sufficient to penetrate into the formation; placing a second fluid comprising an alkaline cross linked fluid (col. 4, lines 54-60) into the subterranean formation at a pressure sufficient to cause the second fluid to enter the fracture created or extended by the first fluid; and, releasing the pressure on the subterranean formation and thereby allowing the first fluid to intermix with the second fluid wherein the first fluid lowers that ph of the second fluid and causes the second fluid to reduce viscosity (col. 6, lines 16-34).

Referring to claim 15, Harms discloses a system for treating subterranean formation comprising a first fluid comprising a foamed carbon dioxide fluid, an emulsion of carbon

Art Unit: 3672

dioxide, or a carbon dioxide gel (col.4, lines 41-42) and a second fluid comprising an alkaline cross linked fluid (col. 4, lines 54-60).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Giovanna M. Collins whose telephone number is 703-306-5707. The examiner can normally be reached on 6:30-3 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David J. Bagnell can be reached on 703-308-2151. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


gmc


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